ORGANIC MATTER IN IMPACT MELT ROCKS OF THE EL'GYGYTGYN CRATER (CHUKOTKA, RUSSIA). E. P. Gurov[1] and V. V. Permyakov[1], [1] Institute of Geological Sciences National Academy of Sciences of Ukraine, O. Gonchara Street 55b, 01601 Kiev, Ukraine (e-mail: yevgeniy.gurov@gmail.com).

Discovery of floristic remnants in impact melt rocks of Argentina showed the capabilities of preservation of organic matter by impact process [1]. These data were obtained in 7 horizons of sediments between Miocene and Holocene age, but source impact structures are still unknown.

We discovered well conserved organic matter during the study of impact melt rocks of the El'gygytgyn crater. The 3.58 Ma old and 18 km in diameter El'gygytgyn impact crater is located on the Chukotka Peninsula of northeast Russia [2, 3]. Impactites in the crater are composed of impact melt rocks, glass bombs and shock-metamorphosed volcanic rocks. Impact melt rocks are composed of vesicular glassy matrix of siliceous composition and abundant clasts of minerals of the target [4]. Occurrence of lechatelierite testifies about the temperature of impact melt >1700^{o} C. The floristic remnants were discovered using scanning electron microscope JEOL JSM-64-90LV and INCA Energy^{+} X-ray spectrometry system (Oxford Instruments).

The floristic remnants that are presented by scarps of leaves (Fig.1), particles of cell tissue (Fig.2), and their complex aggregates occur in vesicles of glassy matrix. The sizes of floristic particles vary from 8 to 200 μm. Content of C in the floristic remnants is 25-50 wt% and reaches up to 60-70 wt%, content of O is from 25 wt% up to 60 wt%, SiO_2 <5 wt%, and Al_2O_3<4 wt %. Encapsulation of organic matter in siliceous glass causes its preservation during 3.58 Ma in different environmental conditions.

References: [1] Schultz P.H., Scott Harris R., Clemett S.J., Thomas-Keprta K.L., and Zárate M. 2014. *Geology*, 42, p. 515-518. [2] Gurov E.P., Valter A.A., Gurova E.P., and Kotlovskaya F.I. 1979. Abstr. 10th LPSC, p.479-431. [3] Layer P.W. 2000. *Meteoritics & Planetary Science*, 35, p. 591-599. [4] Gurov E.P. and Koeberl C. 2004. *Meteoritics & Planetary Science*, 39, p. 1495-1508.

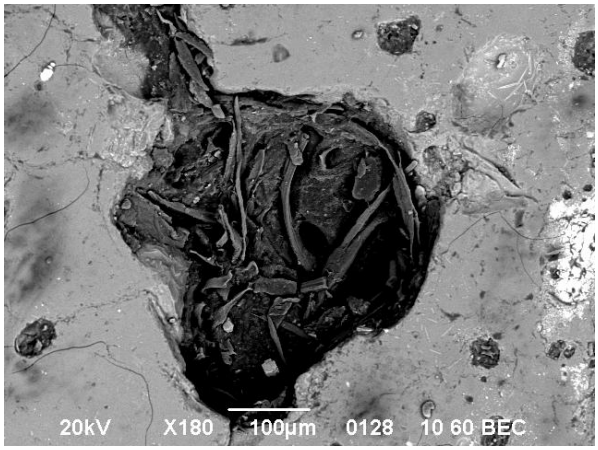

Fig.1. Floristic remnants in vesicles of glassy matrix

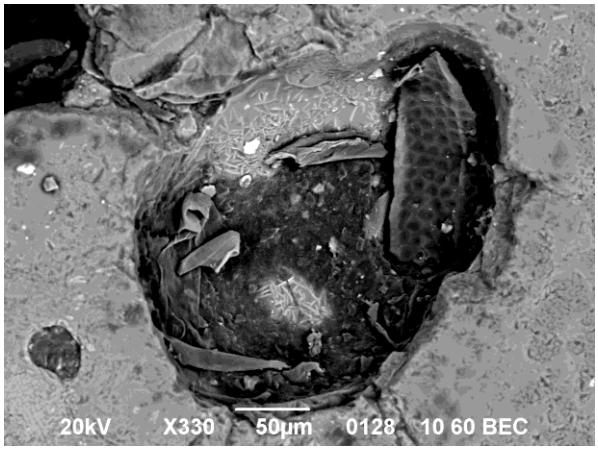

Fig.2. Floristic remnants (peaces of leaves, cell tissues) in vesicle in glassy matrix. Bright areas are covered with feldspar crystallites that formed at internal surfaces of vesicle after its formation.